

Evaluating the efficacy of AI content detection tools in differentiating between human and AI-generated text

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Abstract

The proliferation of artificial intelligence (AI)-generated content, particularly from models like ChatGPT, presents potential challenges to academic integrity and raises concerns about plagiarism. This study investigates the capabilities of various AI content detection tools in discerning human and AI-authored content. Fifteen paragraphs each from ChatGPT Models 3.5 and 4 on the topic of cooling towers in the engineering process and five human-written control responses were generated for evaluation. AI content detection tools developed by OpenAI, Writer, Copyleaks, GPTZero, and CrossPlag were used to evaluate these paragraphs. Findings reveal that the AI detection tools were more accurate in identifying content generated by GPT 3.5 than GPT 4. However, when applied to human-written control responses, the tools exhibited inconsistencies, producing false positives and uncertain classifications. This study underscores the need for further development and refinement of AI content detection tools as AI-generated content becomes more sophisticated and harder to distinguish from human-written text.